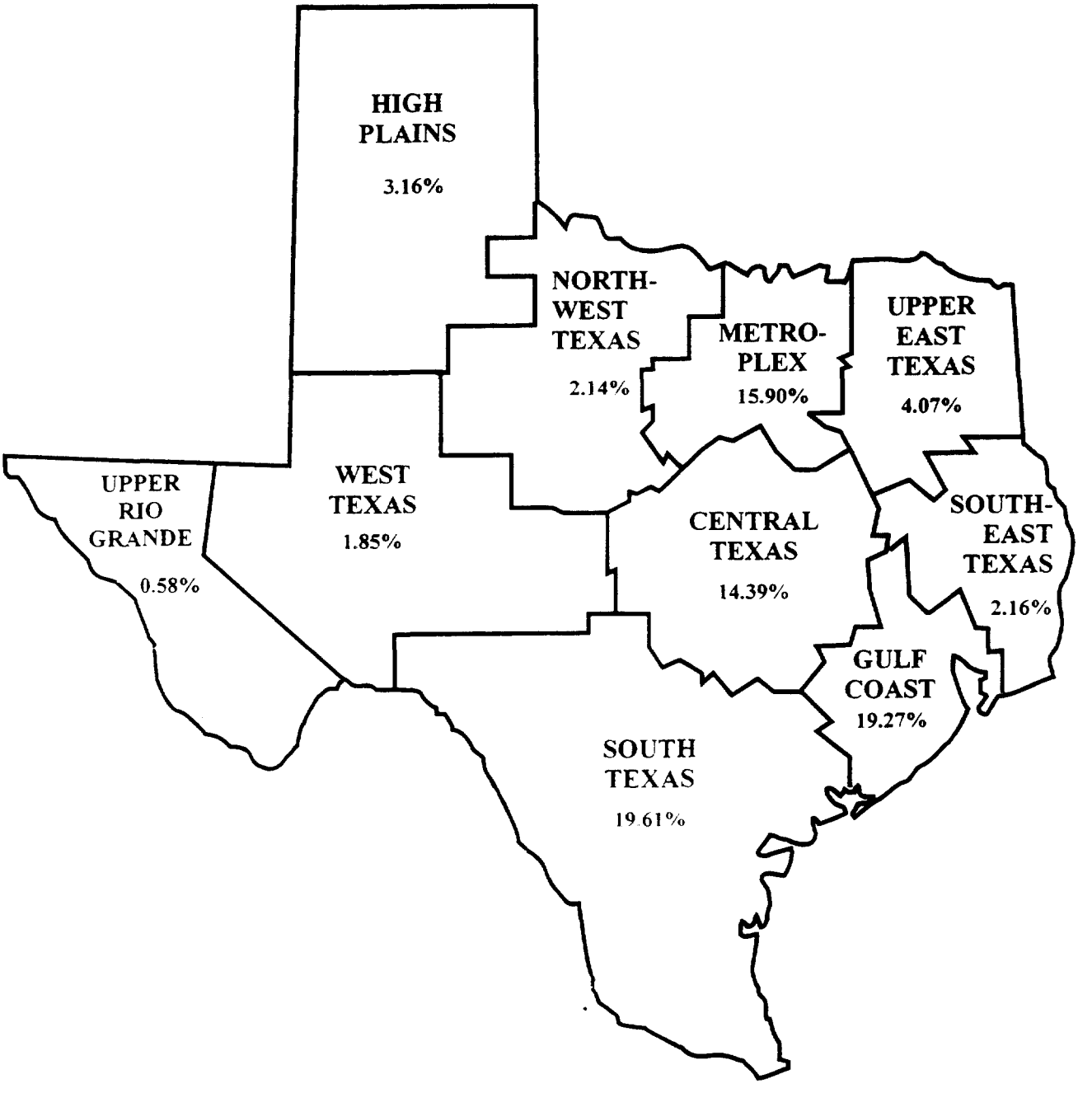
FIGURE 3.1
COMPTROLLER'S ECONOMIC REGIONS OF TEXAS
PERCENT OF TOTAL SPENDING
BASED ON CONSTRUCTION DOLLARS



Sources: Comptroller of Public Accounts: General Information Division.
State of Texas centralized payment data (FY89-FY93)

TABLE 3.1
GEOGRAPHIC MARKET RESULTS BASED ON THE NUMBER OF VENDORS
AND DOLLARS FOR THE STATE OF TEXAS
(FY 89 - FY 93)

State's Economic Regions	Construction		Professional Services		Other Services		Commodities	
	Percent of Dollars	Percent of Vendors	Percent of Dollars	Percent of Vendors	Percent of Dollars	Percent of Vendors	Percent of Dollars	Percent of Vendors
High Plains	3.16 %	7.04 %	2.54 %	5.52 %	1.06 %	5.07 %	1.67 %	4.18 %
Northwest Texas	2.14	5.71	1.63	5.48	1.16	4.03	0.97	3.29
Metroplex	15.90	15.31	20.12	18.51	15.91	15.37	21.14	14.30
Upper East Texas	4.07	6.37	5.52	4.84	1.69	4.54	2.11	3.55
Southeast Texas	2.16	5.02	1.36	4.20	0.85	3.56	1.19	3.03
Gulf Coast	19.27	12.23	20.38	13.35	14.79	12.83	13.65	10.96
Central Texas	14.39	18.58	15.37	17.10	24.46	17.08	17.05	11.80
South Texas	19.61	16.52	6.69	19.67	4.66	13.64	6.25	10.87
West Texas	1.85	4.81	0.67	3.58	0.74	3.48	0.73	3.07
Upper Rio Grande	0.58	2.56	0.24	2.30	0.58	2.19	0.33	1.75
State of Texas	83.13	94.15	74.52	94.55	65.90	81.79	65.09	66.80
Out-of-State	16.88	5.86	25.48	5.45	34.09	18.21	34.91	33.19

Note: This table reports the percent of dollars paid to vendors and the percent of vendors by economic region.
The results are reported for each of the economic regions that comprise the State of Texas.
Economic regions are defined by the State's Comptroller of Public Accounts pursuant to State Law.
Numbers may not sum to 100% due to rounding errors.

Source: State of Texas central payment data

used by State agencies to describe the type of good or service purchased).[58] The data also included the vendor's name, Federal tax identification number and address.

1. Development of the State's Central Payment Database

When we received the State's central payment data, we took the following steps to prepare the data for analysis:

First, we assigned a major procurement category (i.e., construction, professional services, other services and commodity purchasing) to each observation in the database. The procurement category was assigned based on the object code under which the payment was reported. The State defined the object codes that corresponded to each major procurement category. In addition, the State restricted the payment data provided to include only those payments that were reported under the specified object codes. A listing of the object codes included in the study and their corresponding procurement category is provided in Appendix C.

Second, we assigned a two-digit standard industrial classification (SIC) code to each vendor in the central payment data.[59] We used the State's sales tax and ES202 data to obtain the vendor identification (VID) number and two-digit SIC code for each vendor that had paid sales tax or

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[58] The Comptroller of Public Accounts issues expenditure object codes to provide for consistent payment classification and accurate management information for all payments issued from state funds held in the State Treasury. Expenditure object codes are reviewed annually and updated as needed to support reporting needs for the Comprehensive Annual Financial Report, agencies' legislative appropriations requests, open records requests and any statutory requirements. The Claims Division oversees assignment of all new codes and works with the Fund Accounting Division to ensure that all appropriate system impacts are set for each expenditure object code, such as references to related Legislative Budget Board, Generally Accepted Accounting Principles and National Association of Colleges and Universities Business Officers objects and general ledger debits and credits.

[59] See *Standard Industrial Classification Manual*, 1987. The SIC is the statistical classification standard that is used by the federal government to report economic statistics classified by industry. Examples of two-digit SIC codes include special trade construction (SIC17), wholesale trade–durable goods (SIC50) and medical services (SIC80). We provide a listing of 2-digit SIC codes and brief descriptions in Appendix E.

unemployment insurance tax to the State.[60,61,62] We then merged the two-digit SIC codes to the State's central payment data by the VID number. Using this method, we were able to assign two-digit SIC codes to over 65 percent of the data, accounting for more than 85 percent of the State's procurement dollars. We then used the two-digit SIC codes assigned by the State's tax data to determine the two-digit SIC code most frequently associated with each of the State's object codes. Firms that were not assigned a two-digit SIC code from the State's tax data were assigned a modal two-digit SIC code based on the object code under which their payments were reported. Table 3.2 provides a sample of the modal SIC codes that correspond to the State's object codes for construction and professional services.

Third, we eliminated payments made to public agencies and State employees. We also excluded payments to regulated public utilities and to vendors, such as the Texas Department of Criminal Justice Industries and Texas Industries for the Blind and Handicapped, for which the State set aside particular procurements.[63]

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[60] The State's sales tax data included the vendor identification number, vendor name and address and SIC code for each vendor that paid sales tax to the State of Texas. The data is maintained by the Comptroller's Office

[61] The ES202 data included the vendor identification number and primary SIC code for each vendor that paid unemployment insurance tax to the State of Texas from FY89 through FY93. The data is maintained by the Texas Employment Commission.

[62] The State's central payment data, the GSC HUB directory, sales tax and ES202 data all included the vendor's VID number. The VID number is comprised of 14 characters, an 11-character taxpayer identification number (including either the vendor's federal identification number or social security number) and a 3-character mail/address code.

[63] There was no information in the central payment data that identified a vendor as a public agency, utility or State employee. We identified State and public agencies based on a coding schematic identified in the VID number and manual checking. We eliminated State employees from the data using a file including the social security numbers of all persons employed by the State during the Study period. However, because there were over 200,000 vendors in the State's central payment data, some agencies and/or employees may remain in the data.

TABLE 3.2

TWO-DIGIT SIC CODES MOST FREQUENTLY ASSOCIATED WITH STATE OBJECT CODES FOR CONSTRUCTION AND PROFESSIONAL SERVICES

Construction

Object Codes	Object Code Titles	Modal Two-Digit SIC Codes	Two-Digit SIC Code Descriptions
7266	Maintenance/repair of buildings	17	Construction--special trade contractors
7270	Maintenance/repair of roads/highways	16	Heavy construction other than building construction--contractors
7341	Construction/improvement of buildings	15	Building construction--general contractors and operative builder
7343	Remodeling of buildings	17	Construction--special trade contractors
7346	Construction/improvement of grounds/land	17	Construction--special trade contractors
7347	Construction of highways	16	Heavy construction other than building construction--contractors
7349	Construction of roads	16	Heavy construction other than building construction--contractors

Professional Services

Object Codes	Object Code Titles	Modal Two-Digit SIC Codes	Two-Digit SIC Code Descriptions
7245	Financial and accounting services	87	Architectural, surveying, engineering, accounting, research, management & related services
7248	Medical Services	80	Health services
7256	Architectural/Engineering Services	87	Architectural, surveying, engineering, accounting, research, management & related services
7298	Surveying	87	Architectural, surveying, engineering, accounting, research, management & related services

Source: State's central payment data, ES202 data, State Sales Tax Data, Standard Industrial Classification Manual 1987

Fourth, we excluded payments to vendors for which we had no valid address data. Approximately 12 percent of the address data for FY89 was not included in the central payment data. Less than 1 percent of the address data for the remaining years was missing.

Fifth, we assigned county and regional codes based on the vendor's zip code.

Sixth, we defined the pre-program period as FY89-FY91 and the program period as FY92-FY93. We summed the dollars paid to vendors, by agency and object code, to the pre-program and program period levels.

The final database included approximately $14.5 billion paid to approximately 190,000 vendors during the FY89-FY93 study period. Table 3.3 summarizes the expenditure data by major procurement category. We used these data to determine the State's geographic market.

TABLE 3.3

BREAKDOWN OF EXPENDITURES IN THE FINAL PAYMENT DATABASE (FY89-FY93)

Procurement Category	Total Dollars	Percent of Dollars
Construction	$9,034,398,336	62.5%
Professional Services	563,248,695	3.9
Other Services	1,565,587,421	10.8
Commodities	3,299,115,318	22.8
TOTAL	$14,462,349,769	100.0%

Source: States of Texas central payment data, FY89-FY93.

II. To What Extent Has the State Utilized HUBs?

During the pre-program period, at the prime contractor level, HUBs received less than 8 percent of State procurement dollars across all procurement categories. During FY92-93, under the State's HUB program, the percentage of dollars received by HUBs increased slightly, ranging from 8 percent in construction to almost 12 percent in professional services. At the subcontractor level we found that, during the pre-program period, HUBs received 8 percent of subcontracts on prime construction contracts awarded by five State agencies: the GSC, TDCJ, MHMR, UT-System and TAMU-System. In contrast, HUB subcontractors received more than 27 percent of the subcontracts awarded for TxDOT's State-funded construction projects during the same period. For all agencies, the percentage of subcontracts awarded to HUBs increased under the State's HUB program.

A. How Do We Estimate HUB Utilization at the Prime Contractor Level?

To estimate utilization at the prime contractor level, we calculated the dollars paid to HUB vendors and the dollars paid to all State vendors. We then determined the percentage of dollars paid to HUBs. To do this, we used the State's central payment data. The data included payment and vendor information for State treasury-funded procurement expenditures made by all State agencies for the study period, FY89-FY93. We restricted the data to include payments to firms located in the State of Texas.[64] Table 3.4 summarizes the total payments made to firms in Texas and included in our statistical analysis. Over the study period, construction accounted for 67.6 percent of the State's

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[64] We were able to calculate reliable estimates of HUB utilization for payments made to firms in Texas. We were not able to calculate reliable estimates of HUB utilization for payments made to firms outside of Texas. To determine the race/ethnicity/gender of the State's vendors, we cross matched the names of State vendors with the names of firms in our master HUB directory. The directory data included comprehensive data on HUB firms in Texas. It included data on firms outside of Texas to the extent that they were identified in the directories collected to develop the master HUB directory. Firms in Texas received over 75 percent of the State's total procurement expenditures from FY89 to FY93

procurement spending; professional services accounted for 3.8 percent; other services for 9.3 percent; and commodities for 19.3 percent.

TABLE 3.4

BREAKDOWN OF EXPENDITURES PAID TO TEXAS FIRMS BY MAJOR PROCUREMENT CATEGORY AND PROGRAM PERIOD (FY89-FY93)

	Pre-Program Dollars	Program Dollars	Total Dollars	Category as Percent of Total Dollars
Construction	$4,484,231,054	3,025,091,197	7,509,322,251	67.6%
Professional Services	$2,278,486,185	191,884,631	419,733,246	3.8
Other Services	$498,673,792	533,128,310	1,031,802,102	9.3
Commodities	$1,095,268,010	1,052,175,711	2,147,433,721	19.3
Total	$6,306,021,471	4,802,279,849	11,108,301,321	100.0%

Source: State of Texas central payment data, FY89-FY93.

We used the State's central payment data to calculate the total dollars paid to vendors. However, to determine the percentage of dollars paid to HUBs, we first had to determine the race, ethnic and gender status of the State's vendors. The central payment data included some information on the vendor's race, ethnicity and gender, however, the information was too incomplete to track HUBs in a manner that would ensure statistically reliable results. At best, the State could identify HUBs that were currently certified by the State. It could not identify HUBs that had never been certified by the State or HUBs that had been certified with the State in the past but had let their certification lapse.

To ensure an accurate representation of HUB participation in State procurement, we supplemented the State's race/ethnic/gender information with existing data sources. We identified 40

cities in Texas, ensuring geographic diversity, with populations over 50,000.[65] We contacted each municipality, the county in which the municipality was located, transportation agencies, chambers of commerce and HUB professional and trade associations to determine whether the municipality, agency or association maintained HUB directories. We compiled information on certified and non-certified HUBs from 51 sources, listed in Appendix D. From these sources, we developed a master HUB directory, using a computer matching algorithm to eliminate duplicate information across directories. The master HUB directory includes data on 26,241 HUB firms.[66]

At this point, we reduced the vendors in the State's central payment database to a unique list of vendors. Using the computer matching algorithm, we matched the firms in the master HUB directory to firms in our unique list of vendors. We then assigned the race/ethnic and gender information to the vendors that matched.

1. Adjustments for Overcounting and Undercounting HUBs

Two types of errors can occur when we try to identify the race/ethnic and gender status of State vendors using information collected from HUB directories. The first type of error occurs when non-HUB firms are mistakenly identified by the State, or in the master HUB directory, as HUBs. This type of error would cause us to overcount HUB firms and, therefore, overestimate HUB utilization. The second type of error occurs when HUB firms do not become certified or identify their firms in HUB directories or HUB business association rosters. This type of error would cause

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[65] Cities with populations over 50,000 include: Houston, Dallas, San Antonio, El Paso, Austin, Fort Worth, Arlington, Corpus Christi, Lubbock, Garland, Irving, Amarillo, Plano, Laredo, Pasadena, Beaumont, Abilene, Waco, Mesquite, Grand Prairie, Brownsville, Wichita, Midland, McAllen, Odessa, San Angelo, Carrollton, Richardson, Tyler, Denton, Longview, Killeen, Baytown, Galveston, Port Arthur, Bryan, Victoria, College Station, Lewisville and Harlingen.

[66] If a HUB had addresses in more than one city, we retained a record for each city in which the HUB was located.

us to undercount HUB firms and, therefore, to underestimate HUB utilization. To account for each of these errors, we conducted an overcount and undercount survey, respectively.

To adjust for the possibility that we had overcounted HUBs (i.e., that some non-HUBs were misidentified as HUBs), we conducted an overcount survey. We selected 1,500 State vendors that we identified as HUBs. These vendors accounted for over 95 percent of all dollars received by HUBs. Of these, we were able to obtain telephone numbers for 1,152 firms which accounted for approximately 88 percent of the dollars paid to HUBs. We conducted a telephone survey of these HUBs to verify their race/ethnic/gender information. We completed surveys with 778 (67.6 percent) of the vendors, accounting for 78 percent of the HUB dollars.[67] Where appropriate, we reassigned the race/ethnic and gender status of these firms based on the survey results. A total of 27 percent of the dollars received by HUBs (under the initial classification) were reassigned to non-HUB firms.[68] We then determined the percentage of total dollars that were paid to HUBs.

To adjust for the possibility that we had undercounted HUBs (i.e., that some firms which we identified as non-HUBs were actually HUBs), we conducted an undercount survey. We took a stratified random sample of 1,507 State vendors that were not identified as either minority or woman-owned firms. The sample design was chosen to minimize the variance of the resulting estimates. We

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[67] We were not able to complete surveys with the remainder of the firms for a number of reasons including: the refusal of the firm to participate in the survey; the firm was out of business or their telephone was disconnected; the firm requested a hard copy of the survey but still did not respond; we attempted to reach the firm at least three times but were unable to get through (i.e., reached an answering machine, busy, no answer), etc. Non-respondents include firms that we identified as being out-of-business.

[68] We collected information on HUB firms from certified (i.e., TxDOT's DBE directory) and non-certified (i.e., Ft. Worth Metro Black Chamber of Commerce Membership Roster) sources. As certification requirements become less stringent, the possibility of finding non-HUB firms in the agency/organization's directory increases. In addition, some organizations, particularly minority Chambers of Commerce, include non-HUB firms that join their organization and advertise to the minority community. We requested organizations which included non-HUB firms in their directories/rosters to identify only HUB firms for inclusion in the directory. However, we did find firms such as Southwestern Bell, Aetna Life and Casualty and Pepsico included in the directories.

then conducted a telephone survey requesting verification of the race/ethnic/gender identity of the selected firms. We completed surveys with 45 percent of the sampled vendors, accounting for 75 percent of the dollars. We adjusted our estimates of utilization upward based on the undercount survey results. Table 3.5 reports the undercount adjustments made for each race/ethnic/gender group and major procurement category. The table also reports the confidence intervals computed across procurement categories for each race/ethnic/gender group.

2. Detailed Findings at the Prime Contractor Level

To measure the State's utilization of HUBs at the prime contractor level, we calculated the total dollars paid to HUB vendors divided by the total dollars paid to all State vendors. Table 3.6 reports the results of our analysis for the pre-program and program periods, for each race/ethnic/gender group, and for each major procurement category.

- During the pre-program period, HUBs, as a group, received between 6.8 and 7.8 percent of the dollars across procurement categories. Overall minority business enterprise (MBE) utilization ranged from about 2.1 percent of dollars in construction to 5.6 percent of dollars in professional services. White woman-owned business enterprise (WBE) utilization ranged from a low of 1.2 percent of dollars in professional services to 5.3 percent of dollars in other services.

- During the program period, HUBs, as a group, received between 8.0 percent and 11.6 percent of dollars across procurement categories. Overall, MBE utilization ranged from 2.2 percent of dollars in construction to 7.7 percent of dollars in professional services. WBE utilization ranged from a low of 3.9 percent in professional services to 5.9 percent of dollars in commodity purchasing.

B. How are HUB Subcontractors Utilized on State Construction Contracts?

HUB subcontractors received 8 percent of subcontracts awarded on prime contracts let by TDCJ, the GSC, MHMR, UT-System and TAMU-System during the pre-program period. They received 10 percent of subcontracts under the State's HUB program. In turn, HUBs received almost 28 percent of the subcontracts and approximately 22 percent of the subcontractor dollars for TxDOT's

TABLE 3.5
UNDERCOUNT ADJUSTMENTS AND CONFIDENCE INTERVALS
STATE OF TEXAS

Race/Sex Group	Construction	Professional Services	Other Services	Commodity Purchasing	Confidence Interval
	(Percent)				
	(1)	(2)	(3)	(4)	(5)
African American	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %
Hispanic	1.28	0.00	0.00	0.48	+/- 0.44
Asian and Other Minorities[1]	0.00	0.11	0.00	0.00	+/- 0.46
White Women	2.50	0.00	1.57	0.59	+/- 0.80

Note: This table reflects the statistical adjustment made to the percentage of total dollars awarded to each race/sex group by procurement category based on the results of NERA's undercount survey.

[1]Asian and Other Minorities include firms identified as Asian Pacific, Asian Indian and Native American.

Source: Undercount survey conducted by NERA.

TABLE 3.6
ESTIMATED HUB UTILIZATION
BASED ON NUMBER OF PRIME VENDORS AND DOLLARS
STATE OF TEXAS

Race/Sex Group	Pre-Program Period[1] Percent of Vendors	Pre-Program Period[1] Percent of Dollars	Program Period[2] Percent of Vendors	Program Period[2] Percent of Dollars
	(Percent)			
	(1)	(2)	(3)	(4)
Construction				
African American	0.3 %	0.0 %	0.6 %	0.1 %
Hispanic	3.4	1.9	3.5	1.9
Asian and Other Minorities[3]	0.3	0.1	0.2	0.2
Minority Subtotal	3.9	2.1	4.3	2.2
White Women	5.4	5.0	6.2	5.8
Total HUB	9.3	7.0	10.5	8.0
Professional Services				
African American	0.5	0.7	0.6	0.6
Hispanic	1.2	2.2	1.3	1.9
Asian and Other Minorities[3]	5.2	2.8	5.2	5.3
Minority Subtotal	7.0	5.6	7.1	7.7
White Women	0.7	1.2	0.7	3.9
Total HUB	14.1	6.8	7.8	11.6
Other Services				
African American	0.4	0.8	0.6	0.8
Hispanic	3.5	1.2	3.8	2.2
Asian and Other Minorities[3]	0.3	0.2	0.5	1.0
Minority Subtotal	4.3	2.2	4.9	4.0
White Women	9.8	5.3	10.1	5.7
Total HUB	14.1	7.5	15.0	9.7
Commodity Purchasing				
African American	0.4	0.7	0.5	0.3
Hispanic	2.4	1.8	2.7	1.7
Asian and Other Minorities[3]	1.2	0.6	1.4	2.0
Minority Subtotal	4.0	3.1	4.6	3.9
White Women	5.6	4.7	6.1	5.9
Total HUB	9.6	7.8	10.7	9.8

Note: Figures may not sum to totals due to rounding.
[1]The pre-program period analysis is based on payments for procurements awarded from September 1, 1988 to August 31, 1991.
[2]The program period analysis is based on payments for procurements awarded from September 1, 1991 to August 31, 1993.
[3]Asians and Other Minorities includes Asian Indian, Chinese, Japanese, Korean, Vietnamese, Filipino, Hawaiian, other Asian or Pacific Islander, Aleut, Eskimo and American Indian.

Source: State of Texas central payment data (FY89 - FY93).

State-funded construction contracts during the pre-program period. They received 34 percent of TxDOT subcontracts and nearly 35 percent of subcontractor dollars under the State's HUB program.

1. Data Sources

The State's central payment data provided no information on the use of subcontractors. This was of particular concern for construction since prime contractors generally subcontract a considerable portion of their work. To obtain subcontractor data, we collected prime and subcontractor information for 344 construction contracts greater than $100,000 that were awarded by the GSC, TDCJ, MHMR, UT-System and TAMU-System. The GSC is responsible for administering construction projects for all state agencies except those statutorily excluded. TDCJ, MHMR, UT-System and TAMU-System are exempted from the GSC's control. The prime contracts from which we collected subcontractor data totalled approximately $1.6 billion. In addition, TxDOT provided us with computerized subcontractor data for 2,181 State-funded prime construction contracts totalling $1.8 billion dollars.[69]

2. The Prime Contractor Survey

To obtain information on the dollars paid to subcontractors, we conducted a mail survey of the prime contractors for which we had collected hard copy data from GSC, TDCJ, MHMR, UT-System and TAMU-System files. Approximately 52 percent of the 344 prime contracts reviewed contained a *subcontractor list.*[70] A subcontractor list, including the names of the subcontractors to be used and the type of work that they were to perform, was to be submitted to the agency by the prime contractor at the start of each project. The lists were not submitted for the purpose of monitoring HUB participation, but solely for the agencies' information and for general project oversight. We collected the subcontractor lists and developed a database of subcontractors on State

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[69] Approximately 78 percent of TxDOT's construction contracts were greater than $100,000.

[70] Contracts with subcontractor lists accounted for 86 percent of the total prime contract dollars.

construction projects. For contracts with subcontractor lists on file, the survey identified each subcontractor and asked that the prime contractor provide information on the total dollars paid (and the dollars they expected to pay) to each subcontractor. We also asked the prime contractor to identify any other subcontractors they may have used on the project. For contracts with no subcontractor data on file, we requested similar information, asking the prime contractor to provide the name and address of the subcontractors used. We conducted follow-up calls to each prime contractor surveyed. In addition, we requested that each agency contact their respective prime contractors who had not responded to encourage their participation in the survey.[71] Despite these efforts, we received survey responses on 40 percent of the contracts and approximately 17 percent of total contract dollars included in the survey.

3. Detailed Findings on HUB Subcontractor Utilization

In Table 3.7 we report the percentage of subcontracts awarded to HUBs on GSC, TDCJ, MHMR, UT-Systems and TAMU-Systems' prime construction contracts. We also report the percentage of subcontracts and subcontractor dollars awarded to HUBs for TxDOT's State-funded construction projects.

The response rate for the prime contractor survey was too low for us to draw reliable estimates of the percentage of dollars received by HUB subcontractors on construction contracts awarded by the five agencies. However, using a combination of the subcontractor lists collected from the contract files and the survey responses, we were able to identify 3,864 subcontracts awarded to Texas firms. These subcontractors were used on 76 percent of the agencies' prime contracts,

[71] Some agencies remailed the initial cover letter requesting the primes' participation; others telephoned the primes directly.

TABLE 3.7
ESTIMATED HUB SUBCONTRACTOR UTILIZATION BASED ON NUMBER OF SUBCONTRACTS AND DOLLARS (FY1989-FY1993)

Race/Sex Group	Pre-program Period[1]		Program Period[1]	
	Percent of Subcontracts	Percent of Dollars	Percent of Subcontracts	Percent of Dollars
	(Percent)			
	(1)	(2)	(3)	(4)
Dept. of Transportation				
African American	0.6 %	0.3 %	2.4 %	6.6 %
Hispanic	5.1	6.4	5.6	15.0
Asian & Native American	0.5	1.4	1.1	1.2
Minority Subtotal	6.2	8.2	9.2	22.9
White Women	21.7	13.9	25.3	13.9
HUB Total	27.9	22.1	34.4	36.7
Five State Agencies [2]				
African American	0.3	n.a.	0.5	n.a.
Hispanic	2.8	n.a.	3.6	n.a.
Asian & Native American	0.3	n.a.	1.0	n.a.
Minority Subtotal	3.5	n.a.	5.1	n.a.
White Women	4.6	n.a.	5.0	n.a.
HUB Total	8.1	n.a.	10.1	n.a.

Note: [1]The pre-program period is defined as FY 89 through FY 91; the program period is defined as FY 92 through FY 93.
[2]Five State agencies: the Texas Department of Criminal Justice, the General Services Commision, UT Systems, TAMU Systems and the Department of Mental Health and Mental Retardation.

Source: Construction contract data collected from State agencies' hard copy files, and a survey of prime contractors.
Construction contract data provided by TxDOT prime contractor survey responses.

accounting for 91 percent of the total prime contract dollars. Using this information, we determined the percentage of subcontracts awarded to HUBs on the agencies' construction contracts.

We used TxDOT's subcontractor data to calculate the percentage of dollars and subcontracts awarded to HUBs on State-funded construction contracts. TxDOT differed from the other agencies not only in the type of construction services that it procured (i.e., heavy construction (SIC16)), but also in its history of including HUBs in its contracting/subcontracting opportunities. Since the early 1980's TxDOT has had federally-mandated disadvantaged business enterprise (DBE) goals set for federally-funded construction projects. The federal goal was 10 percent. Before the State's HUB program was implemented, TxDOT attempted to achieve the 10 percent federal goal for State projects as well. There were no formal reporting requirements for State-funded projects but TxDOT believes that their efforts were met with some success. In FY92, when the State implemented the HUB program, TxDOT already had procedures in place to fulfill the program requirements, and it increased its attempts to utilize HUBs to meet the State's 30 percent goal. Given this history, we use TxDOT's data to determine the effects of a goal program on HUB subcontractor utilization.

As reported in Table 3.7, we find the following:

For the 5 State agencies (GSC, TDCJ, MHMR, UT-Systems and TAMU-Systems),

- HUBs received 8.1 percent of subcontracts during the pre-program period.
- During the pre-program period minority-owned firms received 3.5 percent of all subcontracts. Hispanic-owned firms received 2.8 percent of subcontracts, the largest share of all the minority subgroups. African American and Asian, Native American and other minority-owned firms each received 0.3 percent of subcontracts. Utilization for each minority group increased slightly during the program period.
- White woman-owned firms received 4.6 percent of subcontracts during the pre-program period. This remained basically unchanged under the HUB program.

For TxDOT,

- HUBs received 27.9 percent of subcontracts and 22.1 percent of subcontractor dollars awarded during the pre-program period. During the program period, when TxDOT attempted to achieve the 30 percent goal set by the State, subcontractor utilization increased considerably. HUBs received almost 34.4 percent of the subcontracts and 34.7 percent of the subcontract dollars awarded.

- Under the State's HUB program, the increase in subcontractor utilization was especially dramatic for minorities. Minorities received 6.2 percent of the subcontracts and 8.2 percent of the dollars in the pre-program period. These numbers increased significantly under the State's HUB program: in the program period, minorities received 9.2 percent of the subcontracts and 22.8 percent of the subcontractor dollars awarded.

- Businesses owned by white women received 21.7 percent of subcontracts and 13.9 percent of subcontractor dollars during the pre-program period. Under the State's HUB program, white woman-owned businesses received 25.3 percent of subcontracts and 12 percent of subcontractor dollars.

C. How are HUBs Utilized by Particular Agencies?

The State's utilization of HUBs at the prime contractor level reflects an average of HUB utilization across agencies. Utilization varies across agencies both by major procurement category and by race, ethnicity and gender. For example, TAMU paid 17 percent of its construction dollars to HUBs during the program period; TPWD paid 6 percent of its construction dollars to HUBs in the same period. Similarly, TDCJ paid 17 percent of its professional service dollars to HUBs; TxDOT paid 4 percent of its professional service dollars to HUBs. UT led the other agencies in the utilization of HUBs in other services. The GSC led in the utilization of HUBs in commodities.

1. Data Sources

We used the central payment data to calculate utilization by dollars and by vendors for particular agencies. The data included a code for each state agency. Using this code, we selected TxDOT, TDCJ, the GSC, Comptroller, TPWD, UT (all campuses and System) and TAMU (all campuses and System). These agencies comprised over 80 percent of all State expenditures for goods

and services. We also looked at utilization for the remaining agencies as a whole. Table 3.8 reports the breakdown of expenditures, by procurement category, for these agencies.

In addition, each of the specified agencies provided its own payment and/or procurement/payment data. The central payment data included payment data at the vendor level; it did not include information on payments at the contract or purchase order level. Nor did it include information on locally-funded expenditures that comprise a significant portion of the universities' procurement expenditures.[72] To account for this, TDCJ, Comptroller, the GSC, TPWD, TxDOT, TAMU-Systems and UT-Systems provided agency-specific data that included information on the total dollars paid on contracts and purchase orders.[73,74] The universities' contract data included locally-funded construction and architectural and engineering (A&E) contracts. In addition, UT-Austin and TAMU-College Station provided payment data that included their state and locally-funded expenditures for all major procurement categories.[75,76]

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[72] Locally-funded expenditures are expenditures paid through funds other than State or federal funds (i.e., tuition revenues, donations, etc.).

[73] TDCJ, the GSC, Comptroller and TPWD provided data for all four procurement categories. UT-Systems and TAMU-Systems provided data for construction and A&E services. TxDOT provided data for State-funded construction contracts and for architectural and engineering services regardless of funding source.

[74] TAMU-Systems and UT-Systems also provided information on furnishings contracts. Furnishings contracts are contracts with commodity vendors for furnishings and fixtures (i.e., laboratory tables, computers, etc.) necessary to complete a project (i.e., rehabilitation of the health sciences building). We did not analyze these contracts due to the relatively small number of total contracts and dollars involved.

[75] UT-Austin's payment data included expenditures for UT-Austin and UT-Systems.

[76] TAMU-College Station's payment data included expenditures for: TAMU-College Station, TAMU-Systems and Texas Veterinary Diagnostic Lab for FY91-FY93; Tarleton State University, Prairie View A&M University, Texas Agricultural Experiment Station, TAMU at Galveston, TAMU International University and TAMU at Kingsville for FY92-FY93; and the Texas Forest Service, Texas Animal Damage Control and TAMU-Corpus Christi for FY93. To analyze similar data for the pre-program and program period, we restricted the data used to that provided for TAMU-College Station, TAMU-System and Texas Veterinary Diagnostic Lab.

TABLE 3.8
BREAKDOWN OF EXPENDITURES BY AGENCY
INCLUDED IN THE FINAL DATABASE
RESTRICTED TO STATE OF TEXAS
FY89 - FY93

	Pre-Program Period		Program Period		Total	
Procurement Category	Dollars --($)--	Percent of Total --(Percent)--	Dollars --($)--	Percent of Total --(Percent)--	Dollars --($)--	Percent of Total --(Percent)--
TX DOT						
Construction	$4,021,193,004	91 42 %	$2,617,102,380	86.70 %	$6,638,295,383	89.50 %
Commodity Purchasing	204,101,351	4 64	270,831,286	8.97	474,932,637	6.40
Other Services	94,113,288	2 14	98,307,345	3.26	192,420,633	2.59
Prof Services	79,352,155	1 80	32,439,576	1.07	111,791,731	1.51
TOTAL:	4,398,759,797	100 00	3,018,680,586	100.00	7,417,440,384	100.00
TDCJ						
Construction	$195,032,271	42 97 %	$125,646,966	33.69 %	$320,679,237	38.79 %
Commodity Purchasing	181,187,899	39 92	183,934,072	49 32	365,121,972	44.16
Other Services	26,877,895	5 92	13,968,915	3.75	40,846,810	4.94
Prof Services	50,734,966	11 18	49,383,133	13 24	100,118,099	12.11
TOTAL:	453,833,031	100.00	372,933,086	100.00	826,766,117	100.00
GSC						
Construction	$37,810,460	60 04 %	$34,580,233	59.86 %	$72,390,693	59.96 %
Commodity Purchasing	14,352,082	22 79	11,967,545	20.72	26,319,627	21.80
Other Services	7,109,022	11 29	5,871,313	10.16	12,980,335	10.75
Prof Services	3,699,059	5 87	5,351,264	9.26	9,050,323	7.50
TOTAL:	62,970,622	100.00	57,770,355	100.00	120,740,977	100.00
Comptroller						
Construction	$2,869,713	6.50 %	$15,226,429	17.24 %	$4,398,574	3.90 %
Commodity Purchasing	19,866,737	44.99	50,894,493	57.64	35,093,166	31.11
Other Services	21,182,867	47.97	984,118	1.11	72,077,359	63.90
Prof Services	235,607	0.53	21,197,027	24.01	1,219,724	1.08
TOTAL:	44,154,923	100.00	88,302,067	100.00	112,788,824	100.00
TP&WD						
Construction	$21,197,027	30.83 %	$13,207,877	26.71 %	$34,404,904	29.11 %
Commodity Purchasing	29,849,677	43.42	22,887,037	46.28	52,736,713	44.62
Other Services	15,402,623	22.41	11,559,352	23.38	26,961,976	22.81
Prof Services	2,294,939	3.34	1,794,955	3.63	4,089,893	3.46
TOTAL:	68,744,266	100.00	49,449,221	100.00	118,193,487	100.00

TABLE 3.8
BREAKDOWN OF EXPENDITURES BY AGENCY
INCLUDED IN THE FINAL DATABASE
RESTRICTED TO STATE OF TEXAS
FY89 - FY93

Procurement Category	Pre-Program Period Dollars --($)--	Pre-Program Period Percent of Total --(Percent)--	Program Period Dollars --($)--	Program Period Percent of Total --(Percent)--	Total Dollars --($)--	Total Percent of Total --(Percent)--
UT-(Total)						
Construction	$19,706,945	13.00 %	$15,172,339	15.51 %	$34,879,284	13.99 %
Commodity Purchasing	92,985,676	61.35	52,670,147	53.84	145,655,823	58.40
Other Services	32,898,951	21.71	27,571,279	28.18	60,470,230	24.25
Prof. Services	5,971,566	3.94	2,417,913	2.47	8,389,479	3.36
TOTAL:	151,563,137	100.00	97,831,678	100.00	249,394,815	100.00
TX A&M (Total)						
Construction	$11,398,802	14.77 %	$125,646,966	33.69 %	$19,214,245	14.79 %
Commodity Purchasing	39,751,127	51.52	183,934,072	49.32	65,937,831	50.77
Other Services	23,657,261	30.66	13,968,915	3.75	40,949,890	31.53
Prof. Services	2,352,419	3.05	49,383,133	13.24	3,773,532	2.91
TOTAL:	77,159,608	100.00	372,933,086	100.00	129,875,498	100.00
Other Agencies						
Construction	$175,022,832	16.69 %	$210,037,099	19.37 %	$385,059,932	18.05 %
Commodity Purchasing	513,173,462	48.93	468,472,491	43.21	981,645,952	46.02
Other Services	277,431,886	26.45	307,662,984	28.38	585,094,869	27.43
Prof. Services	83,207,906	7.93	98,092,559	9.05	181,300,465	8.50
TOTAL:	1,048,836,086	100.00	1,084,265,132	100.00	2,133,101,219	100.00
Total State						
Construction	$4,484,231,054	71.11 %	$3,025,091,197	62.99 %	$7,509,322,251	67.60 %
Commodity Purchasing	1,095,268,010	17.37	1,052,175,711	21.91	2,147,443,721	19.33
Other Services	498,673,792	7.91	533,128,310	11.10	1,031,802,102	9.29
Prof. Services	227,848,615	3.61	191,884,631	4.00	419,733,246	3.78
TOTAL:	6,306,021,471	100.00	4,802,279,849	100.00	11,108,301,321	100.00

Note: This table reports the number and percent of dollars and vendors included in the final central payment database used for the analysis. The final database was restricted to the State of Texas.

Source: State of Texas centralized payment data (FY89-FY93).

2. Detailed Findings for State Agencies

We report agency utilization based on the central payment data in Columns 1 and 4 of the disparity tables in Appendix A. Agency utilization based on the agency's own data are reported in Columns 1 and 4 of the disparity tables in Appendix B.[77]

III. What Percent of All Establishments Are HUBs?

In this section, we:

- Explain why we measure HUB availability.
- Describe the different ways of measuring the percentage of firms that are owned by minorities or women.
- Describe our sources of data for measuring HUB availability.
- Discuss our methodology for tailoring HUB availability by geographic location and industry.
- Report our findings. We estimate that HUBs comprise 16 percent of construction establishments, 20 percent of professional services establishments, 33 percent of other services establishments and almost 13 percent of commodity purchasing establishments in Texas for the program period.

A. Why Do We Measure HUB Availability?

We wanted to measure HUB availability for two primary reasons:

First, we wanted to determine whether the percentage of spending on goods and services received by HUBs is higher or lower than we would expect given the percentage of establishments that are HUBs in the geographic areas and industries from which the State procures goods and services. HUB availability is an essential ingredient in determining whether there are disparities—i.e., whether HUBs are underutilized.

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[77] For some agencies, in particular procurement categories, there are too few vendors or contracts to report statistically reliable utilization statistics.

Second, we wanted to calculate the percentage of dollars that the State would need to award to HUBs to minimize any disparities if disparities are found and if the State determines that a goals based program is necessary and appropriate. This is important to the State's HUB program since legally defensible goals should be based on HUB availability. If goals are set significantly higher than availability, the program could be subject to abuse and fraud. On the other hand, if disparities are found and goals are set significantly lower than availability, those HUBs that are the victims of discrimination may be unable to compete in the marketplace and may eventually cease to exist.

For both of these purposes, we are interested in measuring the ***percentage*** of available establishments that are owned by minorities or women. The "availability percent" is the ratio of the number of HUB establishments divided by the number of all establishments in the industries used by the State and located in Texas.[78]

B. How Do We Estimate HUB Availability?

1. HUB Availability

To determine the ***actual availability*** of HUBs, we calculate the percentage of all establishments with at least one paid employee that are owned by minorities or women. This measure of availability has at least four advantages which we discuss in more detail below: First, our measure of actual availability is less contaminated by the present effects of discrimination than a measure that focuses solely on similarly qualified businesses. Second, it takes into account some adjustment for firm size. Third, a measure similar to ours was used by the State of Ohio in developing its program which was affirmed in *Ohio Contractors Assn. v. Keip*,[79] a lower court decision that was cited favorably by Justice O'Connor in the *Croson* decision on the issue of availability. Fourth, as we

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[78] To yield a percentage, the resulting figure should be multiplied by 100.

[79] 713 F. 2d 167 (6th Circuit. 1983).

discuss below, it is possible to calculate our estimates from existing data. Alternative methods for calculating availability might be interesting as a theoretical matter, but such methods are not practical if it is not feasible to assemble the data necessary to implement those methods.

Discrimination: Our measure of availability is designed to strike a balance between two opposing positions, each with an element of truth to it. Some might argue that availability should consider all current HUB firms as well as those HUBs that would have existed in the absence of discrimination. This view recognizes that discrimination has depressed the availability of businesses owned by minorities and women and argues for an expansive definition of availability. Others might argue that availability should consider only HUB firms that currently possess the qualifications—such as licenses, bonding capacity, working capital—to compete on an equal footing with non-HUBs for procurements. This view recognizes that HUBs are less likely to possess certain qualifications than non-HUBs and may therefore be less competitive today.

We find that both views are too extreme. The first view is too extreme because it bases availability on what might have been; such a measure of availability is not appropriate for determining whether HUBs are underutilized today. The second view is also too extreme because it contaminates the resulting measure of availability with the *current* effects of discrimination. In Chapter 6, we document evidence that shows discrimination has increased HUBs' costs of doing business by increasing their costs of obtaining supplies or other productive inputs. It has also limited their opportunities for growth by denying them business opportunities or the capital necessary for expansion. Therefore, *current* discrimination makes HUBs less qualified than they would be in the absence of discrimination.[80] Were we to restrict the availability of HUBs only to firms that have the

[80] The discrimination documented in Chapter 6 could also impede the ability of minorities and women to start firms, deter part-time entrepreneurs from becoming full-time business owners and/or increase the failure rate of HUBs compared to non-HUBs. In the absence of discrimination, we would expect that a larger

same *current* qualifications as non-HUBs, we would basically assume away the problem of discrimination.

Size: It was necessary to take into account some aspects of firm size without inappropriately restricting the universe of available firms to those that had obtained particular levels of success that could be contaminated by the effects of discrimination. Therefore, we restricted our analysis of ***actual HUB availability*** to establishments with at least one paid employee; that is, we examine the percent of all establishments with paid employees that are owned by minorities and women. By doing so, we excluded numerous smaller firms without paid employees, many of which are either operated on a part time basis or are inactive.[81] In addition, we use the establishment (a unique physical location of the firm) as our unit of analysis. Many large companies have numerous establishments, sometimes operating in different lines of business. We count each of these establishments in calculating total availability. For example, each of the many establishments that IBM operates in Texas is counted in the availability of total establishments.[82]

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percentage of firms would be operated by HUBs than is currently the case. We describe the calculation of estimates of ***potential availability*** in Chapter 5.

[81] Some businesses without paid employees may, in fact, be able to provide goods and services to public entities. For example, academics often have part-time consulting practices and obtain contracts from public agencies. To the extent that minorities and women are more likely to operate such businesses, our measure of actual availability understates the true actual availability of HUBs and therefore understates the extent to which HUBs have been underutilized.

[82] In addition, we performed a separate analysis of the utilization of HUBs that restricted size qualifications more tightly. We classified firms as either "small" or "large" depending upon the total value of payments received by the firm. In commodities, firms were were classified as small if they had received roughly $3,430 or less in total payments: the threshold varied slightly across different SIC codes within commodity purchasing, and $3,430 is the average. In professional services, firms were were classified as small if they had received less than $10,200, again this number is the average threshold for different SIC codes. In other services, the average cutoff for firms classified as small was $3,940 in total payments. In construction, the cutoff between small and large firms varied more greatly across SIC codes: in SIC15, the cutoff was $116,000 in total payments, in SIC16, the cutoff was $561,000 in total payments, and in SIC17, the cutoff was $4,815 in total payments. After segmenting firms into these categories of small and large, we computed disparities in HUB utilization (as described later in this chapter) within each category. We found that restricting firms